

AMENDMENTS

In the Claims:

Please cancel claims 1-36 and add new claims 37-84.

37. (Added) A fibrin material comprising an elongated structure having at least a portion stretched in at least one longitudinal stretching direction.

38. (Added) The fibrin material of claim 37, wherein the structure is made of a material selected from the group consisting of fibrin, fibrinogen, chondroitin-4, sulfate, dermatan sulfate, keratan sulfate, hyaluronic acid, chitosan, chitin, alginate, laminin, elastin, fibronectin, collagen, organic polymer, peptide, derivatives thereof, and mixtures thereof.

39. (Added) The fibrin material of claim 37, wherein the stretched portion of the structure is porous.

40. (Added) The fibrin material of claim 37, wherein the material of the stretched portion of the structure has at least two densities which are different from each other.

41. (Added) The fibrin material of claim 40, wherein the first density is at least 1.5 times greater than the second density.

42. (Added) The fibrin material of claim 40, wherein the first density is at least 2 times greater than the second density.

43. (Added) The fibrin material of claim 40, wherein the first density is at least 5 times greater than the second density.

44. (Added) The fibrin material of claim 37, wherein the elongated structure has a shape selected from the group consisting of thread, tube, hollow profile, film, fleece, sponge and membrane.

45. (Added) The fibrin material of claim 37, wherein the stretched portion has a shape selected from the group consisting of thread and tube, said stretched portion having an outer diameter of less than 10 mm.

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1755 46. (Added) The fibrin material of claim 37, wherein the stretched portion has a shape selected from the group consisting of thread and tube, said stretched portion having an outer diameter of less than 3 mm.

103 47. (Added) The fibrin material of claim 37, wherein the stretched portion has a shape selected from the group consisting of thread and tube, said stretched portion having an outer diameter of between 100 μ m and 2500 μ m.

255
11/102 48. (Added) The fibrin material of claim 37, wherein the stretched portion has a shape of a tube with a central channel substantially parallel to the stretching direction, said central channel having a cross-section perpendicular to the stretched direction with a diameter of less than 15 mm.

255 49. (Added) The fibrin material of claim 37, wherein the stretched portion has a shape of a tube with a central channel substantially parallel to the stretching direction, said central channel having a cross-section perpendicular to the stretched direction with a diameter of less than 10 mm.

50. (Added) The fibrin material of claim 37, wherein the stretched portion has a shape of a tube with a central channel substantially parallel to the stretching direction, said central channel having a cross-section perpendicular to the stretched direction with a diameter of less than 5 mm.

51. (Added) The fibrin material of claim 37, wherein the stretched portion has a shape of a tube with a central channel substantially parallel to the stretching direction, said central channel having a cross-section perpendicular to the stretched direction with a diameter between 100 μ m and 2500 μ m.

107 52. (Added) The fibrin material of claim 48, wherein said tube has a wall thickness between 0.1 mm and 5 mm. *balloon tube is only 4 mm in total diam!*

53. (Added) The fibrin material of claim 48, wherein said tube has a wall thickness between 0.25 mm and 2.5 mm.

54. (Added) The fibrin material of claim 48, wherein said tube has a wall thickness between 0.5 mm and 2 mm.

or 1/6, 1/11
55. (Added) The fibrin material of claim 37, wherein the amount of fibrin in the material is more than 50%.

12 56. (Added) The fibrin material of claim 37, wherein the elongated structure contains fibrin that is at least partially cross-linked.

57. (Added) A process for the preparation of a fibrin material, comprising the steps of:

AI
providing a first component of a fibrinogen containing material;
providing a second component of a substance having a capability to convert fibrinogen into fibrin;
forming a fibrinogen containing material by mixing the first component and the second component; and
subjecting the fibrin containing material to stretching in a longitudinal direction to obtain an elongated fibrin material.

58. (Added) A process according to claim 57 wherein the first component is selected from the group consisting of fibrin, fibrinogen, chondroitin-4 sulfate, dermatan sulfate, keratan sulfate, hyaluronic acid, chitosan, chitin, alginate, laminin, elastin, fibronectin, collagen, organic polymer, peptide, derivatives thereof, and mixtures thereof.

59. (Added) A process according to claim 57 wherein the stretching is sufficient to extend the length of the fibrin containing material at least 5%.

60. (Added) A process according to claim 57 wherein the stretching is sufficient to extend the length of the fibrin containing material at least 10%.

61. (Added) A process according to claim 57 wherein the stretching is sufficient to extend the length of the fibrin containing material at least 25%.

62. (Added) A process according to claim 57, further comprising a drying step.

63. (Added) A process according to claim 57, wherein at least part of the fibrin containing material is stretched by mechanical or physical treatment.

64. (Added) A process according to claim 63, wherein the mechanical treatment is one of a compression or an extrusion and the physical treatment is one of an energy treatment or freeze-drying.

65. (Added) A process according to claim 57, wherein the fibrin containing material is prepared in a mold or in dies, said material being thereafter stretched by a mechanical or physical treatment in said mold or dies.

66. (Added) A process according to claim 57, wherein the fibrin containing material is at least partially stretched in a solution containing a cross-linking agent.

67. (Added) A process according to claim 57, wherein the fibrin containing material is mechanically or physically treated in dies or in a mold so as to obtain an article having a shape selected from the group consisting of thread, tube, hollow profile, film, fleece, sponge and membrane.

68. (Added) A process according to claim 57, wherein the fibrin containing material contains free water, and in which at least part of the free water is removed before the mechanical or physical treatment step.

69. (Added) A process according to claim 57, wherein the fibrinogen containing material contains at least a further compound selected from the group consisting of fibrin, chondroitin-4 sulfate, dermatan sulfate, keratan sulfate, hyaluronic acid, chitosan, chitin, alginate, laminin, elastin, fibronectin, collagen, organic polymer, peptide, derivatives thereof, and mixtures thereof.

70. (Added) A process according to claim 57, wherein the fibrin containing material is prepared from a fibrinogen-containing material as the first component and a solution containing less than 10 IU/ml thrombin as the second component.

71. (Added) A process according to claim 57, wherein the fibrin containing material is prepared from a fibrinogen-containing material as the first component and a solution containing less than 1 IU/ml thrombin as the second component.

102 72. (Added) A process according to claim 57, wherein the fibrin containing material is prepared from solution having a fibrinogen content of at least 3 mg/ml.

73. (Added) A process according to claim 57, wherein the fibrin containing material is prepared from solution having a fibrinogen content of at least 5 mg/ml.

74. (Added) A process according to claim 57, wherein the fibrin containing material is prepared from solution having a fibrinogen content of at least 10 mg/ml.

75. (Added) A process according to claim 57, wherein the fibrin containing material is prepared from a fibrinogen-containing solution containing a calcium complexing agent.

76. (Added) A process according to claim 57, wherein the material from which the structure is made further contains at least an additive selected from the group consisting of protein, genetic material, anticoagulant, inorganic compound, growth factor, cells, anti-inflammatory compound, compound reducing graft rejection, cell growth inhibitor, antibiotic, antiseptic, analgesic, antineoplastic, chemotherapeutic, polypeptide, protease inhibitor, vitamin, cytokine, cytotoxin, interferon, hormone, antibody, antimicrobial agent, agent for improving the biocompatibility, derivatives thereof, and mixtures thereof.

77. (Added) A process according to claim 57, wherein the fibrin containing material is submitted to lyophilization after stretching.

78. (Added) An article made at least partly from fibrinogen comprising an elongated structure selected from the group consisting of fibrin containing thread, tube, hollow profile, film, fleece, sponge and membrane.

79. (Added) A thread, tube, hollow profile, film, fleece, sponge or membrane obtainable by a process according to claim 57.

80. (Added) The thread, tube, hollow profile, film, fleece, sponge or membrane of claim 79 wherein the stretched portion is stretched in at least two directions substantially perpendicular to one another.

81. (Added) The thread, tube, hollow profile, film, fleece, sponge or membrane of claim 79, which is rolled around an axis substantially perpendicular to the longitudinal direction.

82. (Added) A process for the manufacture of a shaped article made at least partly of a fibrin of claim 37, comprising the steps of:

AI
providing an aqueous fibrinogen-containing solution as a first component;
providing thrombin in an inactive form as a second component; and
providing an amount of water in the solution such that after mixing the first and second component to form a gel, substantially no water can be removed when submitting the gel to a centrifugation of 1,000 rounds per minute.

83. (Added) The process of claim 82, wherein the thrombin present in the solution is at least partly activated when submitting the solution to a mechanical or physical treatment, advantageously in a mold or in dies.

84. (Added) A process for making a shaped article made at least partly of a fibrin of claim 37, comprising the steps of:

mixing substances containing particles selected from the group consisting of fibrinogen, inactive thrombin, derivatives thereof and mixtures thereof;
subjecting the mixture to a mechanical or physical treatment, in a mold or in dies;
wetting or moistening the particles; and
partially activating thrombin to obtain a shaped article.